**CCP** **Summer II, 2011**
**Math 161** **Dr. Yun Yoo**

# Attendance Quiz 14

Name: _____ Date: _____

Test 2 covers ch2 and 3.1 on Thursday, August 4. You have to study all hw sets and AQ #8-14. Also you have to study a piecewise function.

1. Given quadratic function $f(x) = -x^2 - x + 1$,
   (a) Find its vertex and its *x*- and *y*-intercept(s).
   (b) Express it in standard form.
   (c) Find the domain and range of $f(x)$.
   (d) Find the maximum/minimum of $f(x)$.
   (d) Sketch its graph clearly.
   (e) Is $f(x)$ one-to-one?

2. Given the function $f(x) = |x|$ (on the back 7(a)), write an equation for each graph that is obtained from the graph of $f$ as follows and sketch it.
   (a) shift 1 units upward
   (b) shift 1 units to downward
   (c) shift 1 units to the right
   (d) shift 1 units to the left
   (e) shift 2 units to the upward and 3 units to the right
   (f) reflect in the *x*-axis
   (g) reflect in the *y*-axis
   (h) refect in the origin

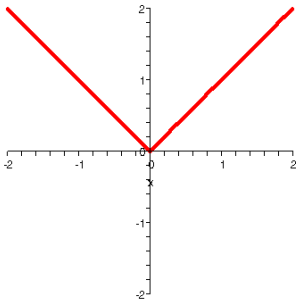
3. Given functions $f(x) = \dfrac{1-x}{1+x}$, $g(x) = \sqrt{1-x^2}$, $h(x) = \sqrt[4]{x^2 - 6x}$, find the domain of given functions.

4. Given $f(x) = \sqrt{x}$, $g(x) = 2x - 3$, find the functions $f \circ g$, $g \circ f$, $fg$, $\dfrac{f}{g}$ and their domains.

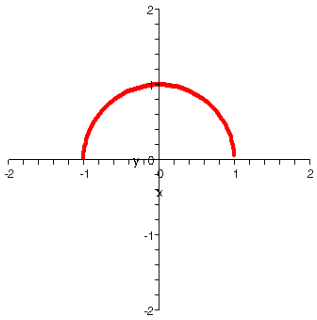
5. Given $f(x) = -x^2 + 1,\ x \geq 0$ find $f^{-1}$ and find the domain and range of $f^{-1}$.

6. Determine give function $f(x) = \dfrac{x^3}{x^2 - 1}$ is odd/even/neither.

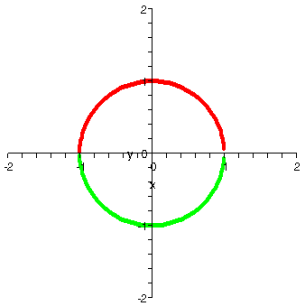
7. Given graphs below,



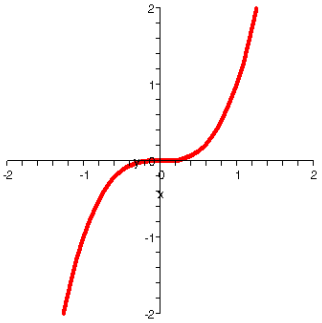
(I)



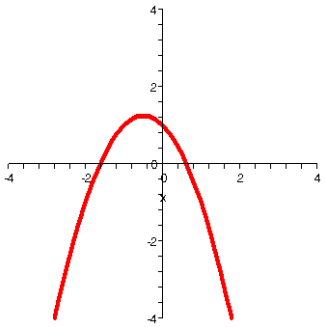
(II)



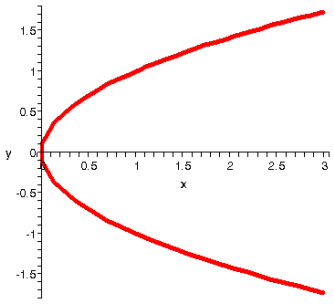
(III)



(IV)



(V)



(VI)

(a) Which one are the functions?

(b) Which one are the one-to-one?

(c) Which one are even functions?

(d) Which one are odd functions?